

THE GENUS *MATHIOLUS* DISTANT (HEMIPTERA: PENTATOMIDAE)

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Abstract.—The genus *Mathiolus* Distant, 1889, is transferred from the pentatomid subfamily Discocephalinae to the nominate tribe of the Pentatominae. A diagnosis is given for the genus. The type species is redescribed and a lectotype designated. Two new species are added to the genus, *M. labiatus* from Venezuela and *M. tumidus* from Ecuador.

Distant (1889) proposed *Mathiolus generatus* as a new genus and new species in the Discocephalinae based on specimens collected by Champion in Guatemala. Since then, neither the genus nor species has been mentioned in the literature, except in the catalogs of Lethierry and Severin (1893) and Kirkaldy (1909). Here the genus is redefined and the type species redescribed. Two new species are described, one from Venezuela and the other from Ecuador.

In pentatomids of the subfamily Discocephalinae, the first rostral segment projects posteriorly beyond the bucculae and usually reaches well onto the prosternum. In all genera of Discocephalini and most genera of Ochlerini, the two tribes of Discocephalinae, the labium originates behind an imaginary plane perpendicular to the longitudinal axis of the body and at the anterior limit of the eyes. Females in all genera of Ochlerini, and males of some genera, have the superior surface of the first tarsal segment of each hind leg excavated or flattened. In *Mathiolus*, the basal segment of the rostrum lies entirely between the bucculae, the labium originates in front of the eyes, and the superior surface of the first tarsal segment of all legs of both sexes is convex. *Mathiolus* is therefore removed from the Discocephalinae and placed in the nominate tribe of the Pentatominae among those genera without a spine or tubercle at the base of the abdominal venter.

Mathiolus Distant, 1889

Mathiolus Distant, 1889:326; Lethierry and Severin, 1893:87; Kirkaldy, 1909:218.

Diagnosis. Each hind and middle femur armed subapically on inferior surface with single tubercle or spine; all tibiae broadly sulcate; tarsi 3-segmented. Base of abdominal venter subtuberculate mesially; all pairs of trichobothria laterad of imaginary band connecting spiracles on each side. Ostiolar rugae lanceolate, each extending approximately $\frac{1}{4}$ distance from mesial limit of ostiole to lateral margin of metapleuron. Prosternum with obtuse carina on each side running obliquely from anterior pronotal margin to juncture between procoxae; both mesosternum and metasternum carinate mesially.

Females or both sexes brachypterous; membrane lacking veins, wrinkled, present but much reduced in brachypterous forms; claval suture obscure. Scutellum about

$\frac{1}{10}$ longer than wide at base. Anterior margin of pronotum shallowly and rather evenly concave; anterolateral margins nearly straight, narrowly reflexed. Jugs convergent or contiguous before tylus. Antennae 5-segmented; segments 1 and 2 subequal in length; segments 3 and 4 also subequal in length, each as long or somewhat longer than segments 1 and 2 combined. Basal segment of rostrum lying entirely between bucculae; latter evanescent near base of head, each rounded anteriorly, without tooth.

Type species. Mathiolus generatus Distant, 1889, by monotypy.

Comments. Several western hemisphere genera in Pentatomini have some femora armed, but only *Mathiolus* has a single, preapical tubercle or spine on each of the hind and middle femora.

KEY TO *MATHIOLUS* SPECIES

1. Jugs greatly swollen apically along mesial margin; 2nd rostral segment just surpassing procoxae *tumidus*, new species
 - Anterior disk of head approximately level; 2nd rostral segment reaching mesocoxae 2
2. Inferior surface of each hind femur with preapical spine (Fig. 15); spiracles round ...
 - *labiatus*, new species
 - Inferior surface of each hind femur with obtuse tubercle (Fig. 9); spiracles oval
 - *generatus* Distant

Mathiolus generatus Distant, 1889

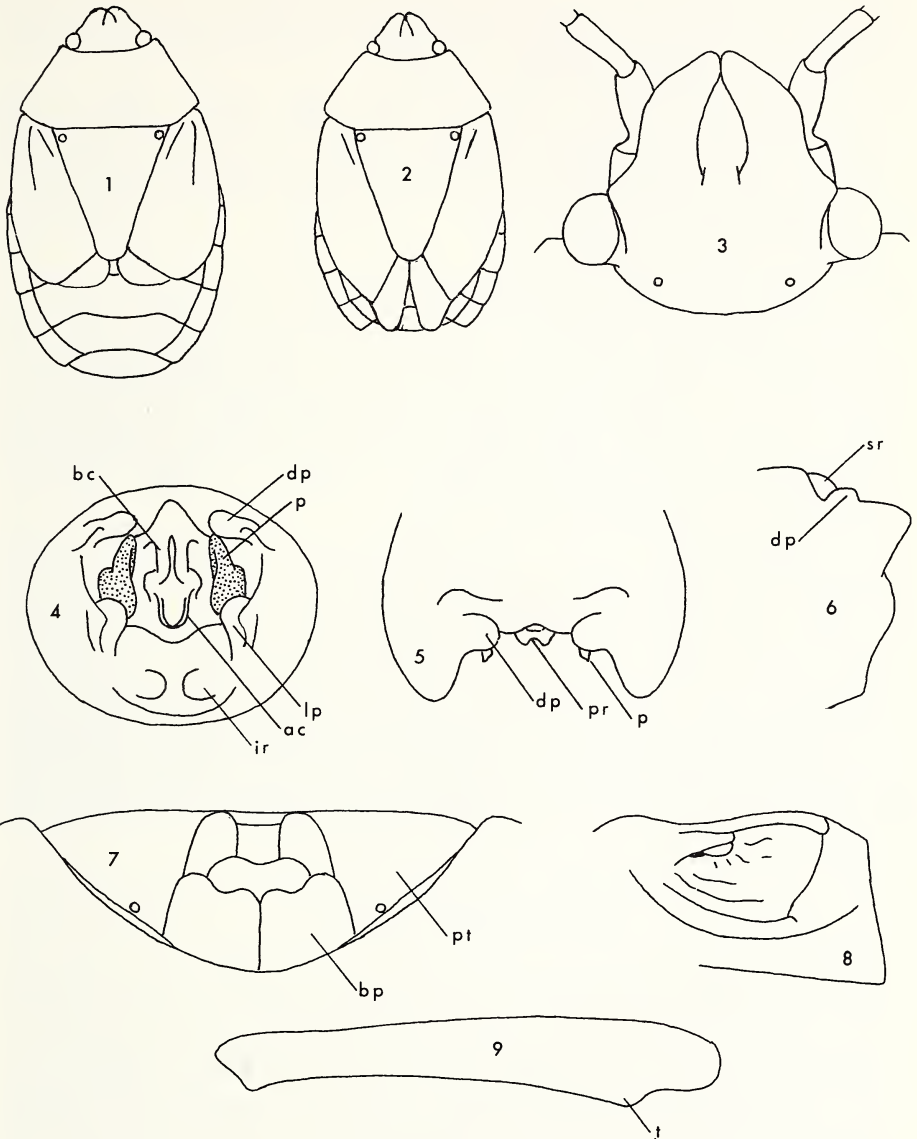
Figs. 1-9

Mathiolus generatus Distant, 1889:326, Pl. 31 figs. 4, 5; Lethierry and Severin, 1893: 87; Kirkaldy, 1909:218.

Redescription. General color dark brown with black punctation; sterna, precoxae, legs, metapleura except evaporative areas, costal margins of hemelytra ventrally, rostrum and segments 1-4 of antennae stramineous, all except rostrum with dark punctures or dots; abdominal venter dark castaneous.

Jugs contiguous before tylus, anteocular margins slightly produced (Fig. 3). Ocelli small, scarcely larger than largest nearby punctures. A few short setae present on eyes. Basal segment of each antenna reaching apex of head. Second rostral segment reaching but not surpassing mesocoxae. Pronotum moderately convex transversely, more so anteriorly than posteriorly, scarcely declined toward head. Scutellar disk weakly convex along basal margin; lateral margins nearly straight, distal end of frena indistinct; scutellar apex narrowly rounded; black fovea present in each basal angle. R+M vein weakly defined, with small, pale macule at distal end. In male, junction of membrane and corium of each hemelytron straight, diagonal, with posterolateral angle of corium over last abdominal tergite; posterolateral part of 4th, most of 5th, all of 6th and 7th connexival segments and lateral border of last 2 abdominal tergites exposed; membrane not extending beyond apex of abdomen (Fig. 2). Female brachypterous; all of 7th tergite, nearly all of 6th, and posterolateral corners of 5th exposed; posterolateral margin of each corium broadly rounded; membrane extending onto basal portion of 6th tergite (Fig. 1).

Mesosternum slightly tectiform; metasternum tectiform, moderately produced, arcuate in profile, subtruncate posteriorly. Evaporative area on each metapleuron raised, dark, matte, weakly punctate and furrowed (Fig. 8). Each hind femur with



Figs. 1-9. *Mathiolus generatus*. 1. Dorsum, female. 2. Dorsum, male. 3. Head. 4. Pygophore, caudal view. 5. Pygophore, dorsal view. 6. Pygophore, lateral view. 7. Genital plates, caudo-ventral view. 8. Metapleuron. 9. Anterior surface of right hind femur. Symbols: ac, apical carina on proctiger; bc, basal carina on proctiger; bp, basal plate; dp, dorsobasal projection; ir, inferior ridge; lp, lateral projection; p, parameres; pr, proctiger; pt, 8th paratergite; sr, superior ridge; t, tubercle.

low, broad, preapical tubercle on inferior surface (Fig. 9); middle femora less distinctly tuberculate. Spiracles black, oval. Disk of abdominal venter finely punctate laterally, aciculate mesially. Pseudosutures inconspicuous.

Inferior ridge of pygophore with pair of shallow concavities near ventral margin (Fig. 4). Rim of genital cup on each side at dorsal limit of inferior ridge produced mesad as obtuse, lateral projection; dorsolateral portion of rim on each side produced strongly caudad, with stout, obtuse, dorsobasal projection directed mesad (Figs. 4–6). Proctiger with parallel, longitudinal pair of carinae basally and thin pair apically on each side of concavity (Fig. 4).

Spiracle present on each 8th paratergite. Posterior margin of basal plate emarginate, posterolateral angle projecting caudad farther than posteromesial angle (Fig. 7).

Measurements (mm). Head 2.2–2.4 wide, 1.7–2.0 long; interocular width 1.45–1.60; distance between ocelli 0.80–0.90, across ocelli 0.95–1.10, from ocellus to nearest eye 0.30–0.35. Length of segments 1–4 of each antenna 0.50–0.65, 0.45–0.50, 1.20–1.30, 1.15–1.20 (5th missing). Length of rostral segments 2–4 (1 specimen only) 1.40, 1.05, 0.85. Pronotal width 4.4–4.8, mesial length 1.9–2.0. Width of scutellum at base 2.8–3.0, width at distal end of frena 1.3, length 3.5–3.8. Body length 8.9–10.2, width at 4th abdominal segment 5.2–6.0.

Type. The syntypes consist of 1♀, 2♂♂ preserved in the British Museum (Natural History). The following specimen is designated lectotype: ♂, pinned, with pygophore mounted on point, labeled (a) “Cerro Zunil, 4–5000 ft., Champion” (b) “Distant Coll. 1911–383”. Paralectotypes are: ♂ carded and labeled (a) “Type” (red-edged circle) (b) “Cerro Zunil, 4000 ft., Champion” (c) “Mathiolus generatus”; 1♀ pinned (re-mounted) and labeled (a) “Cerro Zunil, 4000 ft., Champion” (b) “BCA Hem. I, Mathiolus generatus.” In addition, all specimens are labeled “syntype” (blue-edged circle). Distant did not designate type specimens and consequently the “type” label has no validity. The specimen bearing this label is probably the male illustrated in the original description. It was not selected as lectotype, however, because it is less suitable as a reference specimen than the specimen chosen.

Distribution. Known only from the type series collected on Cerro Zunil, Guatemala.

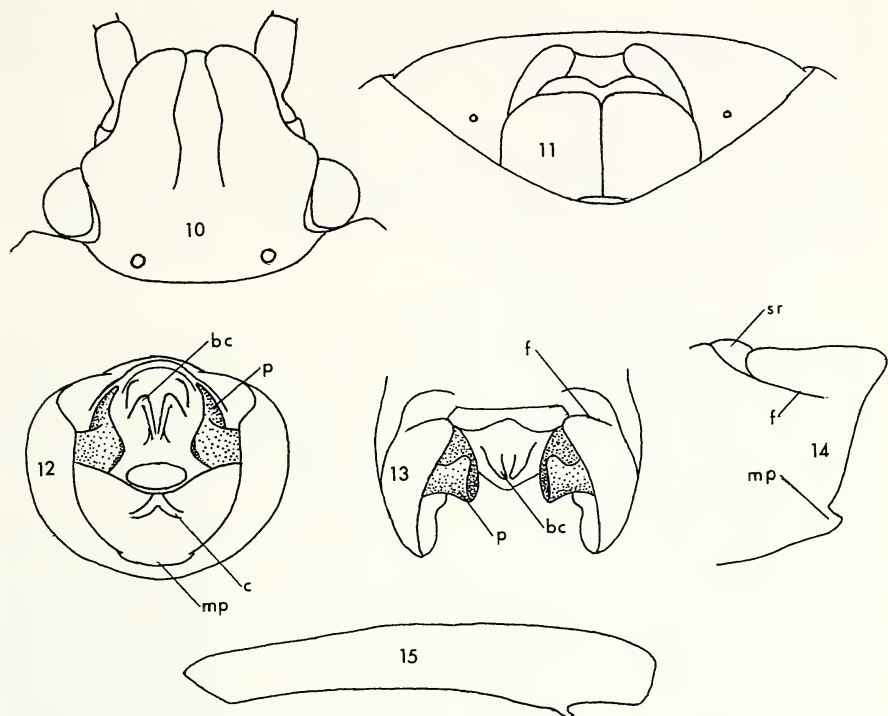
Mathiolus labiatus, new species

Figs. 10–15

Description. General color dark brown with black punctation; precoxae, costal margins of hemelytra ventrally and appendages stramineous; apical halves of last antennal segments fuscous; thoracic pleura mottled stramineous and brown.

Juga projecting a little beyond tylus, convergent but not contiguous apically; antocular margins slightly produced (Fig. 10). Ocelli obscure in male, small in female but appreciably larger in diameter than any nearby puncture. A few short setae present on eyes. Basal segment of each antenna reaching apex of head in male, exceeding apex of head by diameter of segment in female. Second rostral segment reaching mesocoxae. Pronotum and scutellum similar to *generatus* but scutellar apex more broadly rounded. R+M vein weakly defined except at base, with pale spot at distal end. Both sexes brachypterous, leaving posterolateral part of 5th tergite and all of 6th and 7th tergites exposed; part of 4th connexival segment and all of 5th–7th connexival segments exposed; posterolateral corner of each corium rounded.

Sterna as in *generatus* except metasternum less produced. Evaporative areas raised,



Figs. 10–15. *Mathiolus labiatus*. 10. Head, female. 11. Genital plates. 12. Pygophore, caudal view. 13. Pygophore, dorsal view. 14. Pygophore, lateral view. 15. Anterior surface of right hind femur. Symbols: bc, basal carina of proctiger; c, carina on inferior ridge; f, furrow; mp, mesial projection; p, paramere; sr, superior ridge.

matte, strongly furrowed, punctation black. Each hind and middle femur with short, black preapical spine on low tubercle on inferior surface (Fig. 15). Spiracles black, oval. Disk of abdominal venter finely and rather evenly punctate, aciculate medially.

Inferior ridge of pygophore with chevron-shaped, mesial carina at dorsal margin (Fig. 12). Short, broad, labiate, mesial projection located on ventral rim of genital cup (Figs. 12, 14). Lateral portion of genital cup rim strongly produced, black, divided into dorsolateral and ventrolateral parts by obtuse, external ridge; dorsolateral part separated from remainder of pygophore by furrow (Figs. 13, 14). Parameres cultrate apically, curving dorsad, each with stout plate projecting at right angles from lateral surface. Proctiger with pair of longitudinal, subparallel carinae subbasally; apex slightly concave.

Spiracles on 8th paratergites of female. Posterior margin of basal plates evenly convex from caudoventral view (Fig. 11).

Measurements (mm). Head 1.95–2.05 wide, 1.35–1.55 long; interocular width 1.30–1.40; distance between ocelli 0.75, across ocelli 0.95, from ocellus to nearest eye 0.30 (ocellar measurements of female). Length of segments 1–5 of each antenna 0.50, 0.40–0.45, 0.95–1.05, 0.90–1.00, 1.25–1.30. Length of segments 1–4 of rostrum 0.75–

0.80, 1.35, 0.9–1.05, 0.75–0.80. Pronotal width 4.3–4.8, mesial length 1.6–1.8. Width of scutellum at base 2.6–3.0, length 2.9–3.3. Body length 8.3–9.4, width at 4th abdominal segment 4.8–4.9. The smaller measurement, where a range is given, is that of the male holotype.

Types. Holotype, ♂, labeled (a) "LaGrita, 2400 m. Edo. Táchira, VENEZ. Bordón, leg. 16 III 1983" (b) "Colección del Instituto de Biología, UNAM, Mexico, D.F." Deposited in the Instituto de Biología, Universidad Nacional Autónoma de México. Paratype, ♀, labeled same as holotype. Deposited in author's collection.

Distribution. Western Venezuela.

***Mathiolus tumidus*, new species**

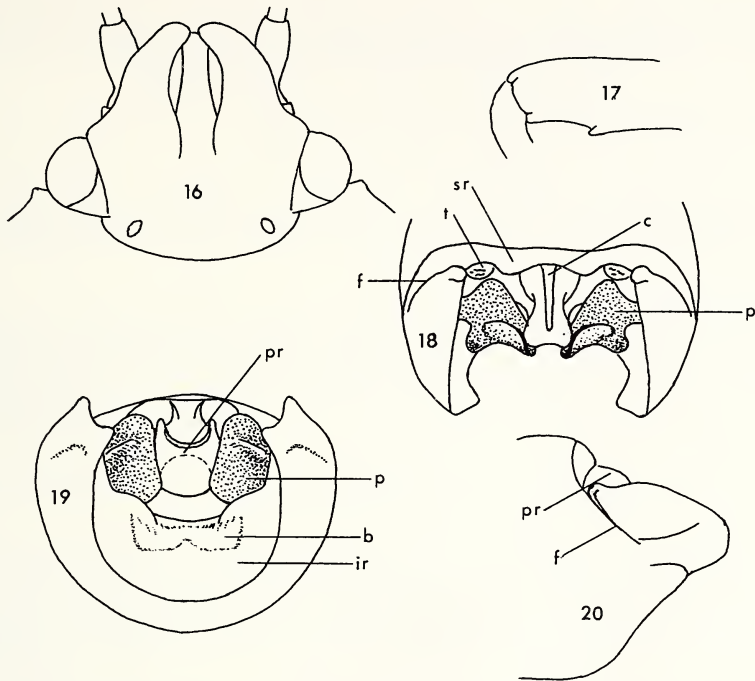
Description. Pronotum fuscous, remainder of dorsum dark brown. Venter except metathorax predominately black or fuscous; metathorax, precoxae, costal margins of hemelytra ventrally, and some interstices on abdominal disk stramineous; evaporative areas and metapleura with dark dots surrounding punctures; appendages stramineous, all but rostrum with dark dots, many dots on middle and hind femora and tibiae fusing into small macules. Punctuation black.

Juga convergent, strongly tumescent apically along mesial margin. Antocular margins slightly produced (Fig. 16). Ocelli small but larger in diameter than any nearby puncture. Eyes not setose. Basal antennal segments in male not exceeding apex of head. Second rostral segment just surpassing procoxae; apex of terminal segment lying between metacoxae. Middle third of anterior pronotal margin raised as thin collar; from this a thin, mesial carina extends to vague, transverse, rugose fascia which includes the poorly defined cicatrices; pronotal disk behind fascia rugosely punctate. Scutellum only slightly convex, rugosely punctate, with black fovea in each basal angle; postfrenal portion well defined, apex moderately rounded. Claval suture of each hemelytron obscure; R+M vein well developed with a small, ivory spot at distal end; male brachypterous (female unknown), leaving all of 7th tergite, posterior part of 6th (all of it laterally) and posterolateral corners of 5th exposed; remnant of membrane present; posterolateral corner of each corium broadly rounded.

Sterna as in *generatus* excepting metasternum less arcuate in profile. Evaporative areas raised, matte, inconspicuously furrowed, with irregular black punctuation. Hind and middle femora each with short, black, preapical spine on inferior surface (Fig. 17). Spiracles black, round; a small, irregular, subcalloused, stramineous macule contiguous with and mesad of each spiracle. Abdominal disk sparsely aciculate and obscurely punctate mesially, densely punctate laterally.

Inferior ridge of pygophore large, with low, irregularly shaped prominence along mesial part of dorsal margin (Fig. 19). Dorsolateral portion of genital cup rim strongly produced, fuscous, set apart dorsally from remainder of pygophore by furrow (Figs. 18, 20); between this portion of genital cup rim on each side and superior ridge, a small, rugose, cushion-shaped tumescence present on anterior wall of genital cup; dorsolateral corners of pygophore appearing notched from caudal view (Fig. 19). Parameres truncate distally, both dorsal and ventral apical margins broadly rounded; stout plate on lateral surface of each paramere curved slightly ventrad. Proctiger strongly crested mesially.

Measurements (mm). Head 2.05 wide, 1.55 long; interocular width 1.35; distance between ocelli 0.75, across ocelli 0.95, from ocellus to nearest eye 0.30. Length of antennal segments 1–4 (5th missing) 0.50, 0.40, 0.90, 0.90. Length of segments 1–4



Figs. 16–20. *Mathiolus timidus*. 16. Head. 17. Anterior surface of right hind femur. 18. Pygophore, dorsal view. 19. Pygophore, caudal view. 20. Pygopore, lateral view. Symbols: b, prominence on inferior ridge; c, carina on proctiger; f, furrow; ir, inferior ridge; p, paramere; pr, proctiger; sr, superior ridge; t, cushion-shaped tumescence.

of rostrum 0.60, 1.10, 0.85, 0.70. Pronotal width 4.6, mesial length 1.7. Width of scutellum at base 2.8, at distal end of frena 1.9; length 3.0. Body length 8.0, width at 4th abdominal segment 5.1.

Type. Holotype, ♂ labeled “Ecuador: Napo, Reventador” and “on *Solanum umbellatum*.” Deposited in the Instituto de Biología, Universidad Nacional Autónoma de México. No paratypes.

Distribution. Eastern Ecuador.

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